DOCUMENT RESUME

ED 060 638 EM 009 662

AUTHOR	Payne, David A.; And Others
TITLE	The Impact of Instructional Television Teacher Aids on Teacher Behavior and Student Learning.
INSTITUTION	Georgia Univ., Athens.
SPONS AGENCY	Georgia State Dept. of Education, Atlanta.
PUB DATE	Apr 72
NOTE	10p.; Paper presented at the American Educational Research Association Annual Meeting (Chicago, Illinois, April 5, 1972)
EDRS PRICE	MF-$0.65 HC-$3.29
DESCRIPTORS	Achievement; Achievement Tests; Elementary Education; Elementary School Teachers; *Instructional Aids; *Instructional Television; *Manuals; *Teacher Behavior; Telecourses

ABSTRACT

A study was devised to assess the impact of two teacher aids--"teleseries" teacher manuals and "communiques"--used in conjunction with in-school television series. Teacher manuals, in addition to providing lesson related information, cross-referenced the programs and units to state approved textbooks and provided suggested student reading. The communiques provided, in their half hour after school broadcasts, preview information by the television teacher, with emphasis on content, teacher presentation methods, discussion topics, and suggested pre- and post-program activities. The results of the study suggest that various physical, content, and organizational characteristics of the televised teacher communiques and teacher manuals used with elementary school level instructional television series are positively evaluated by teachers; that significant student learning results from instructional television; that increased student learning is a function of the nature of teacher self-preparatory activity; that teachers do not engage in a high frequency of pre- or post-telelesson activity with their students; and that in general, exposure to two teacher aids is more influential than a single aid. (SH)

ED 060638

THE IMPACT OF INSTRUCTIONAL TELEVISION TEACHER AIDS ON TEACHER BEHAVIOR AND STUDENT LEARNING

David A. Payne
University of Georgia

Jerry B. Ayers
Tennessee Technological University

Peter J. Rowe
~~Stephens College~~
College of Charleston

Virtually all in-school television series are accompanied by various kinds of teacher aids. Such aids are aimed at the improvement of student learning by highlighting for the teacher basic content to be covered in forthcoming programs, new vocabulary to be introduced, suggested pre and post broadcast activities and citing appropriate source material. Few, if any, studies have been conducted to assess the impact of such teacher aids on the intended audiences - teachers and students. The teacher aids of concern here are teleseries teacher manuals and the television "communiques". The teacher manuals in addition to providing lesson related information, cross-reference the programs and units to state approved textbooks and provide suggested student reading. The communiques provide, in their half hour after school time broadcasts, preview information by the television teacher on forthcoming five lesson blocks, with emphasis on content, teacher presentation methods, discussion topics, and suggested pre and post program activities.

The purposes of the present study were to (a) develop and apply a set of rating scales aimed at evaluating various content, organizational and physical aspects of these two types of teacher aids, (b) investigate the impact of the aids on teacher knowledge and behavior, and (c) examine student learning

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* The research reported herein was conducted under a contract between the Georgia Department of Education and the University of Georgia as part of a larger project, "The Development and Field Test of an Evaluation Model for Educational Television" under the direction of the first named author.

Paper presented at the 1972 Meetings of the American Educational Research Association, April 5, Chicago, Ill.

under various conditions of teacher use of the aids. The ultimate aim was to use the resulting data as inputs into a larger project concerned with educational television evaluation model building.

METHODOLOGY

The study was divided into two parts. The first dealt with two telelessons from the second grade social studies series, Wonderful You. This 15 minute - 33 lesson series is intended to guide the child toward a better understanding of what is human about man and how he can become more so. Specific research efforts in this investigation dealt with two lessons concerned with general problems in city planning and the development of the super-capital of Brazil, Basilia. Focus in this study was on student and teacher learning. The second study used two telelessons from a sixth grade discovery math series, Patterns. The lessons, from the 33 part 20 minute discovery oriented mathematics series, focused on concepts and methods of measuring volume. The focus in this study was on student learning and the impact of the manual and communique on pre and post telelesson teacher behavior.

Identification of Instructional Objectives

The manuals and communiques and telelesson tapes were studied by pairs of experienced teachers. After a brief training in stating behavioral objectives, the teachers provided sets of objectives for both teachers and students. A total of 36 teacher and 25 student objectives were generated from the Wonderful You material. Examination of Patterns yielded 48 teacher and 36 student objectives.

Instrumentation

Based on the objectives derived using the just described procedure the following instruments were constructed:

(a) A 25 item Wonderful You student achievement test based on telelesson and manual objectives.

(b) A 20 item Wonderful You teacher achievement test based only on the teacher communique objectives.

(c) A 75 item observation schedule, the Patterns Observation Summary, based on the teacher manual and communique objectives. The categories teacher gives, teacher asks, and pupil responds were used for each of the 75 objectives,and

(d) An 18 item Patterns student achievement test based on manual and television objectives.

In addition 26 item manual and 21 item communique rating scales were constructed. A five point scale (5 = Excellent, ... 1 = Poor) was used.

Samples and Procedures

Teachers and students using the Wonderful You series were identified by the Social Science Curriculum Director of a large Georgia school system and were randomly assigned by teacher to one of three groups; (1) view communique only, (2) view communique and study manual, and (3) study manual only. Two groups of non-ITV users were also identified, and additional groups designated; a (4) no-view no-study group and a (5) student view only group. The final sample sizes are described in Table 1. Teachers in groups 1, 2,3,

Insert Table 1 about here

and 4 met at the same time. Groups 1 and 2 viewed the Wonderful You communique,

completed a rating form, and took the achievement test. Group three teachers completed a manual evaluation form and the achievement test. The achievement test was also administered to the teachers in Group 4. After students had viewed the two telelessons during scheduled broadcast time the achievement test was administered.

The groups for the Patterns study were developed in approximately the same way as those for Wonderful You. One difference being that two different school systems had to be used in order to secure large enough samples. The final sample sizes are described in Table 1. A student view only group was not used in this study as it was felt that the control group provided sufficient data for evaluating the effectiveness of the three treatment combinations.

Communique and manual evaluation forms were administered to the appropriate groups of teachers, and student achievement tests given following scheduled broadcasts of the two telelessons. In addition a group of junior college students was given a brief training session in the application of the observation schedule and in test administration. All teachers were observed for approximately 30 minutes immediately before and after each telelesson broadcast.

RESULTS

Evaluation of Communiques

The range of mean ratings (five point scale) for both series communiques was quite large with a modal rating of about three. Although quite similarly evaluated, the Patterns communique tended to receive higher ratings than the Wonderful You manual probably due to the fact that it was considerably more "methods" oriented. Teachers felt that the poorest charac-

teristic of the communiques was the scheduled showing time (after school), but that both communiques effected organized, accurate, useful, informative and helpful presentations. In general the group who had studied the appropriate manual material prior to viewing the communique tended to give somewhat higher ratings.

Evaluation of Manuals

As with the communiques, the two series manuals tended to evidence similar ratings. The majority of the ratings were between three and four. It was felt that the material was not at an appropriate level of difficulty for the students. High ratings were given accuracy of material, adequacy of lesson bibliography, readability and practicalness. It was again noted that if a teacher had both viewed the communique and studied the manual, higher ratings tended to be given, particularly with regard to practicalness of follow-up activities. The general physical characteristics (print size, binding, illustration) were rated highly.

Student and Teacher Achievement - Wonderful You

Descriptive statistics resulting from the administration of the achievement tests to both teachers and students are summarized in Table 2. It can

Insert Table 2 about here

be seen that the Wonderful You twenty item teacher achievement test did not show large differences between groups. This was confirmed by a non-significant F-ratio derived from an analysis of variance. It would appear, however, when treatment means are compared with the control, that some benefit can be shown to be derived from studying the manual and/or viewing the communique.

The relatively high score of the control group was unexpected and might be evaluated as indicating that the test was not as specific to the television material as thought.

Examination of the student test data reveals quite a different picture of the impact on student learnings as transferred facilitated or translated by teachers from the teacher aid materials. The student groups whose teachers studied the manual and reviewed the communique achieved higher than the other groups. As might be expected, there is little difference between those groups whose teachers had studied only the manual or viewed the communique. This eye-ball analysis of the significance of the mean differences was confirmed by a five group one-way analysis of variance ($F = 179.5$, d.f. = 4/448, $p < .01$). Subsequent application of Duncan's New Multiple Range Test indicated non-chance significant difference between all groups except for the manual only and communique only groups.

Student Achievement - Patterns

The means and standard deviations for the four student Patterns groups are found in Table 2. Again a differential teacher-preparation treatment effect is noted. The unexpected finding that the communique and manual group was not the highest is noted. The students in the manual, and communique group achieved approximately as expected when compared with each other, and with the control group. But their superiority over the communique and manual group was puzzling. Investigation of the manual and communique groups indicated that they were composed of definitely above average students with respect to both intelligence and achievement. These groups, by chance, had experienced considerable exposure to the content of the telelesson prior to their involvement in the experiment. An analysis of variance was performed which yielded significant results ($F = 70.63$, d.f. = 3/614, $p < .01$).

Application of Duncan's New Multiple Range Test to the differences between means indicated significant differences between the communique only and communique and manual, and control group, and between the manual only and communique and manual and control groups. There was no significant difference between the communique only and manual only or communique and manual and control groups.

Teacher Behavior - Patterns

Application of the Patterns Observation Summary did not reveal a high frequency of teacher pre or post lesson activity that was tied specifically to the telelesson objectives. It was expected that the teachers exposed to the manual and/or communique would be aware of more activities and perhaps utilize more of them in their classrooms. Although the communique and manual group tended to use more relevant activities no remarkable data were observed. It is quite likely that the practical limits of time impose restrictions on teacher preparatory activities. There is always a question of reliability of observers and the limited sampling of teacher behavior taken in this study. The observation technique however would seem to warrant further study.

CONCLUSIONS

The following conclusions are warranted from analysis of the data:

(1) Various physical, content and organizational characteristics of the televised teacher communiques, and teacher manuals used with elementary school level instructional television series are positively evaluated by teachers.

(2) Significant student learning results from instructional television.

(3) Increased student learning is a function of the nature of teacher

self-preparatory activity. If teachers study series manuals and/or view televised communiques, their students learn more than if they do not engage in such activites. Although it is not immediately apparent in teachers upon testing with a relevant achievement test, there is a differential effect on student learning which can be assigned to one or both teacher aids-manuals and/or communiques. Perhaps the exposure to teacher aids does result in some kind of sensitization of the teachers to relevant content and objectives which ultimately get translated and communicated to students.

(4) Teachers do not engage in a high frequency of pre or post telelesson activity with their students.

(5) In general exposure to two teacher aids is more influential than a single aid.

TABLE 1
Sample Sizes In
Two ITV Studies

	SERIES			
	Wonderful You		Patterns	
	Teachers	Students	Teachers	Students
Group				
1. Communique	8	94	7	218
2. Communique and Manual	7	124	4	109
3. Manual	8	44	7	164
4. Control	5	80	4	124
5. Student View Only		107		

TABLE 2
Descriptive Statistics for Teacher and Student Achievement Tests

	SERIES					
	Wonderful You				Patterns	
	Teacher		Student		Student	
Group	$\bar{X}$	S	$\bar{X}$	S	$\bar{X}$	S
1. Communique	14.1	2.3	14.1	2.6	11.8	2.7
2. Communique and Manual	14.7	3.2	15.8	2.7	8.7	2.8
3. Manual	13.3	3.6	13.9	2.5	11.7	2.6
4. Control	12.6	2.3	12.0	2.4	8.6	2.8
5. Student View Only			12.9	2.6		